

canny, as though a tremendous peace had settled on the earth. During the storm a piece of timber hit and fractured my shoulder, but at no time was I unconscious. Even now, although the storm occurred 10 days ago, I still have the impression that I was in hell and have returned to earth."

A second storm of considerably less intensity passed over the Center Hill community about 3:30 p.m., damaging a gable of the Center Hill school, blowing down a number of small buildings and a barn, the latter belonging to A. W. Hanson, killing a number of his cattle and injuring others. This storm moved from the west toward the east although not believed to be a fully formed tornado.

At the Daleville end of the tornado path, the D. E. Harbour home, a two-story frame structure was left standing though damaged to such an extent that it must be torn down before it can be rebuilt. The pendent cloud did not pass directly over this house but probably about 100 feet to the southeast of it. The front or east side and the south side of the main part of the house were completely blown out and a large portion of the roof destroyed while the building was drawn over toward the south about 15° from the perpendicular.

The home of Jean Gordon, a Negro, was destroyed by the storm—the roof was blown away and the house bowled over. His wife and their five children were indoors at the time. One of the children, a boy about 6 years of age, frightened by the roar of the storm which was about to strike, started to run out. He got as far as the outside edge of the porch when the wind blew him back into the house. In the meantime a 9-months-old baby was blown from its bed across the room into an empty fireplace, a distance of probably 10 feet. Bricks and timbers fell all around the baby as well as the mother and her other children, but none was even slightly scratched.

The home of Algie White near Daleville was completely destroyed and most of this home and the furnishings were carried away when the pendent cloud passed over it. Mr. White and his family were away for the day. One of the many pranks played by the storm occurred at this place. A small stand was left undamaged and as it had stood before the storm, with a lamp on it with the chimney unbroken, and beside the lamp a memorandum book, though all had been soaked by the rain following the tornado.

The Purvis-Alamucha-Kewanee tornado apparently started on or near the Lauderdale-Clarke County line in the Purvis community at about 2:55 p.m. and traveled northeastward for about 16 miles to a point on or near the Mississippi-Alabama line about 2 miles southeast of Kewanee. This storm was witnessed by a number of persons. W. L. Smith, the city salesman for the Standard Oil Co. at Meridian, described the Purvis-Alamucha-

Kewanee tornado in detail to the writer. Mr. Smith was sitting with his family and parents in the living room of his home at Increase on Sunday afternoon, February 25, when they became conscious of a peculiar rumbling sound. They all rushed to a window and saw a funnel-shaped cloud apparently moving toward them, and then they hurried from the house with the intention of all seeking refuge in a flower pit in the yard. However, when they reached the outside they noticed that the pendent cloud would pass some distance to the northwest of them. This tornado was first noticed and the noise first heard by Mr. Smith and his family at about 2:57 p.m. It passed approximately 1 mile to the northwest at 3:02 p.m. and was last observed moving northeastward at 3:08 p.m. The storm seemed to be moving slowly, probably 25 to 30 miles per hour. Due to the fact that the Smith home is not located on elevated ground and is in a more or less wooded section, it was impossible for them to see the portion of the pendent cloud close to the ground, but the remainder of it could be clearly seen. In describing the storm, Mr. Smith stated that thunder-showers and some wind, more or less gusty, had been in progress during the early afternoon and that occasionally the sky looked very threatening, though when the storm was first sighted and during its passage there was no rain falling and the air nearly calm, though the path was only a mile away. A heavy downpour of rain occurred immediately after the tornado had passed and some hail, about the size of peas, fell for a minute or two immediately preceding the passage. There was a noticeable drop in temperature about 30 minutes later. Continuous sheet lightning was observed in the top and immediately following the pendent cloud, giving the effect of a greenish-white glow, and the clouds to the rear of the storm seemed to rush inward as the funnel passed as though filling a vacuum. The path of the storm near Increase was about 400 to 500 feet wide. As the tornado went through Bucatunna Swamp after passing Increase, Mr. Smith observed what he thought to be large tree tops well up in the funnel cloud being thrown out. The country through which this Purvis-Alamucha-Kewanee tornado passed is rather thinly settled and consists mostly of wood and swamp land. This storm killed a white boy and a Negro in the Purvis community, a Negro in the Salem community, and Mr. Curtis Bishop and Mr. Martin Brown near Kewanee. Mrs. Curtis Bishop died 2 days later from injuries received in the storm.

The total number of persons killed by these 2 tornadoes was 12, 1 dying 2 days after the storm from injuries received in it. About 20 other persons were seriously injured, while some 15 to 20 received minor injuries. Twenty-five buildings were completely destroyed, and 19 others damaged.

## BIBLIOGRAPHY

C. FITZHUGH TALMAN, *in charge of Library*

### RECENT ADDITIONS

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## SOLAR OBSERVATIONS

### SOLAR AND SKY RADIATION MEASUREMENTS DURING FEBRUARY 1934

By IRVING F. HAND, Assistant in Solar Radiation Investigations

For a description of instruments employed and their exposures, the reader is referred to the January 1932 Review, page 26.

Table 1 shows that solar radiation intensities averaged considerably above normal for February at Washington and slightly below normal at Madison and Lincoln. The reading of 1.59 gram calories per minute per square centimeter of normal surface made on the 9th at Washington, on which date the lowest temperature ( $-6.5^{\circ}\text{F}$ .) since January 1912, was also recorded, is the highest normal incidence measurement ever obtained by this Bureau in that city, either directly or corrected for mean solar distance; the latter value in this case being 1.56 gram calories. Narrow band spectral measurements obtained on that day also show an exceedingly small water and dust content of the atmosphere.

Through the kind cooperation of Dr. H. H. Kimball, of Harvard University, who read the Marvin pyrheliometer, and Dr. L. B. Aldrich, of the Smithsonian Astrophysical Observatory, who read alternately Smithsonian silver-disk pyrheliometers no. 1 and no. 5, both our substandard pyrheliometers were checked during February and showed no change in their constants. The two recording microammeters in use at Washington were also carefully checked at several points on their scales against a standard microammeter. We therefore are confident that all pyrheliometric apparatus in use at that station is in good condition.

Table 2 shows a deficiency in the total solar and sky radiation received on a horizontal surface at Fresno, Pittsburgh, Twin Falls, La Jolla, and Miami, and an excess at all other stations for which normals have been computed.

Turbidity measurements obtained on the 6th show a decreasing amount of dry dust and water vapor and

other measurements on the 9th, 14th, 17th, and 20th show remarkably low dust and water content of the atmosphere.

No polarization measurements were obtained at either Washington or Madison, owing to partially or completely snow-covered ground.

TABLE 1.—Solar radiation intensities during February 1934

Gram-calories per minute per square centimeter of normal surface

#### WASHINGTON, D.C.

		Sun's zenith distance										
Date	8 a.m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	Noon	
	75th mer. time	Air mass										Local mean solar time
		A.M.					P.M.					
		e	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0	
	mm	cal	cal	cal	cal	cal	cal	cal	cal	cal	mm	
Feb. 3.....	1.24		0.60	0.81	1.44						0.96	
Feb. 6.....	1.60				1.22		1.37	1.13	1.04	0.89	1.45	
Feb. 9.....	0.38			1.34	1.54		1.59	1.37	1.18	1.02	.51	
Feb. 10.....	.66			1.32	1.48						.81	
Feb. 14.....	.91	0.80	.93	1.12	1.31	1.63					1.24	
Feb. 17.....	1.37			1.10	1.30	1.63					1.19	
Feb. 20.....	.86		1.03	1.16	1.32	1.71	1.28	1.09	.92		.79	
Feb. 21.....	1.60		.93	1.04							1.52	
Feb. 24.....	.79			1.22	1.39	1.66					.81	
Feb. 27.....	.81		.70	.86	1.27	1.39	1.05				.86	
Means.....		(.80)	.84	1.11	1.36	1.60	1.32	1.20	1.05	(.96)		
Departures.....		+.07	+.01	+.11	+.16		+.12	+.21	+.19	+.19		

#### MADISON, WIS.

Feb. 1.....	1.68	1.04	1.10	1.28	1.45						1.37
Feb. 12.....	3.81						1.40				3.15
Feb. 19.....	.86	1.05	1.16	1.31	1.43	1.58	1.40				1.12
Feb. 23.....	.96		1.05	1.23	1.48						.64
Feb. 26.....	.74		1.10	1.24	1.28						.74
Feb. 27.....	.81	.93	1.01	1.15	1.39	1.57	1.36				.86
Feb. 28.....	1.37	.59	.76	.72	1.10	1.41	1.05				2.06
Means.....	.90	1.03	1.16	1.36	1.52	1.30					
Departures.....	-.03	-.04	-.03	±.00		-.06					